while uniformed and higher illuminance exposure is performed so as to expose the photosensitive resin using the second photomask.

24. (New) The method of claim 22, wherein the photosensitive resin comprises a positive photosensitive resin, and the method further comprises removing the photosensitive resin when it is left in the second region after the developing.

25. (New) The method of claim 22, wherein uniform and low-illuminance exposure is performed so as to expose the photosensitive resin using the second photomask, while uniform and higher illuminance exposure is performed so as to expose the photosensitive resin using the first photomask.

REMARKS

This is in response to the Office Action dated February 27, 2002. Claims 1, 3, 15, 16, 18, 20 and 21 have been canceled. New claims 22-25 have been added. Thus, claims 8-14, 17, 19 and 22-25 are now pending. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made**."

Applicant notes with appreciation the Examiner's indication that previous claim 15 contains allowable subject matter. The subject matter of claim 15 has been added to independent claim 14. Thus, claims 14 and 17 are now in condition for allowance.

Claims 11-13 stand rejected under 35 U.S.C. Section 103(a) as being allegedly unpatentable over Ichimura (US 6,181,397) in view of both JP 9-90426 and Chang (US 6,163,405). This 3-way Section 103(a) rejection is respectfully traversed for at least the following reasons.

Claim 11 requires "using a *single photomask* to form both a) asperities in a first region of the photosensitive resin which do not extend all the way through the photosensitive resin, and b) contact holes in a second region of the photosensitive resin, said contact holes extending all the way through the photosensitive resin; providing said photomask with ***light transmitting portions, light intercepting portions, and semi-light transmitting portions***, so that different amounts of light exposure are utilized using said photomask in order to form at least one of said asperities and said contact holes." For example, see Figs. 6-7 of the instant application where a single photomask 35 includes light transmitting portions 17c which transmit light, light intercepting portions 18c which block light, and semi-light transmitting portions which partially transmit light. The claimed asperities and contact holes are formed in layer 9 using this single mask. No cited reference discloses or suggests forming asperities and contact holes with a single photomask having each of light transmitting portions, light intercepting portions, and semi-light transmitting portions.

Ichimura discloses forming asperities and contact holes in insulating layer 12 using *both* transparent glass sheet 18 with an irregular surface texture and photomask 17, respectively (e.g., Fig. 4; col. 8, lines 47-65; and col. col. 10, line 59 through col. 11, line 24). The Office Action acknowledges that Ichimura fails to disclose or suggest the use of

a single photomask having the light transmitting portions, light intercepting portions, and semi-light transmitting portions required by claim 11.

Recognizing this flaw in Ichimura, the Office Action cites JP 9-90426, in particular Figs. 7-8 thereof. However, the photomask 350 in JP 9-90426 (see Figs. 7-8) includes only light transmitting portions and light blocking (intercepting) portions. Reference numerals 320 and 330 represent light intercepting portions. In other words, the photomask 350 of JP 9-90426 has *no* semi-light transmitting portions. JP 9-90426 teaches changing sizes and distribution of light intercepting portions and developing time in order to control the shape of asperities; in contrast, the invention of claim 11 uses semi-light transmitting portions. These teaching are dissimilar and contrary to one another. Thus, if one were to have applied the teachings of JP 9-90426 to Ichimura, one would have used the mask of JP 9-90426 and thus would not have had any semi-light transmitting portions. Thus, the combination of Ichimura and JP 9-90426 teaches directly away from claim 11 and cannot meet the same.

The Office Action also cites Chang. Chang simply discloses a mask having various degrees of semi-transmission (there are no light transmitting portions in Chang's mask). However, if one were to have combined Ichimura and JP 9-90426 as alleged in the Section 103(a) rejection in the Office Action, one would not have needed Chang and there would have been no reason to look to the same. In other words, *assuming arguendo* that the mask of JP 9-90426 was used instead of the glass sheet and mask of Ichimura in order to form the contact holes and asperities, there would be no need for anything taught by Chang since the process would have already been complete. The addition of Chang to

the underlying combination of Ichimura and JP 9-90426 makes no sense and would not have been done by one of ordinary skill in the art since there would have been no reason or suggestion to do so. The techniques of JP 9-90426 and Chang are diametrically opposed methods of patterning. One or the other may be used, but there is no suggestion in the cited art for using them in combination. It is respectfully submitted that the alleged Section 103(a) combination is incorrect.

Claim 19 stands rejected under 35 U.S.C. Section 102(e) as being allegedly anticipated by Ichimura. This Section 102(e) rejection is respectfully traversed for at least the following reasons.

Claim 19 requires "exposing at least part of the first region with various integrals of exposure amounts using a first photomask so that the photosensitive resin in the first region is left in respective different film thicknesses, and exposing at least part of the second region with an integral of exposure amount different from those for the first region using a second photomask [in order to form the asperities and contact holes], wherein each of said first and second photomasks comprise both light transmitting portions for transmitting illuminance and light intercepting portions for blocking illuminance so that the asperities and contact hole are formed based upon arrangement of the light transmitting portions and light intercepting portions in the photomasks." For example, as shown in Figs. 3-5 of the instant application, photomasks 19 and 20 each include light transmitting portion(s) 17a, 17b for transmitting luminance and light intercepting portions 18a, 18b for blocking light. Ichimura fails to disclose or suggest the invention of claim 19.

Ichimura discloses forming asperities in insulating layer 12 using transparent glass sheet 18 with an irregular surface texture and photomask 17 (e.g., Fig. 4; col. 8, lines 47-65; and col. col. 10, line 59 through col. 11, line 24). Ichimura's glass sheet 18 is not a photomask. Moreover, Ichimura's glass sheet 18 does not have the light intercepting portions required by claim 19 (instead, glass sheet 18 is "transparent" as explained by Ichimura at col. 8, line 49). The use by Ichimura of a "transparent" sheet 18 in order to form asperities teaches directly away from the invention of claim 19 where first and second photomasks are used to form asperities and contact holes, respectively, where each of the masks includes both light transmitting portions and light blocking/intercepting portions. Claim 19 cannot be anticipated or otherwise unpatentable over Ichimura. New claim 22 defines over Ichimura in a similar manner.

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn and the application passed to issue. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please cancel claims 1, 3, 15, 16, 18, 20 and 21.

11. (Unamended) A method of making a reflective liquid crystal display, the method comprising:

providing a substrate;

applying a photosensitive resin on the substrate;

using a single photomask to form both a) asperities in a first region of the photosensitive resin which do not extend all the way through the photosensitive resin, and b) contact holes in a second region of the photosensitive resin, said contact holes extending all the way through the photosensitive resin;

providing said photomask with light transmitting portions, light intercepting portions, and semi-light transmitting portions, so that different amounts of light exposure are utilized using said photomask in order to form at least one of said asperities and said contact holes;

developing the exposed photosensitive resin;

heat treating the developed photosensitive resin; and

forming a reflective electrode on the heat treated photosensitive resin so that said reflective electrode is in electrical communication with a switching element through at least one of said contact holes.

14. (Amended) A method of making a reflective liquid crystal display, the method comprising:

applying a photosensitive resin to a substrate;

forming asperities which do not extend all the way through the resin in a first region of the photosensitive resin by using a first photomask and exposing at least part of the first region using said first photomask;

forming contact holes in a second region of the photosensitive resin using a second photomask different than the first photomask, and exposing at least part of the second region using said second photomask;

developing the exposed photosensitive resin;

heat treating the developed photosensitive resin; [and]

forming a reflective electrode on the heat treated photosensitive resin over asperities so that said reflective electrode is in communication with at least one switching element through at least one of the contact holes[.]; and

wherein exposure amounts using the first and second photomasks are the same.

19. (Amended) A method of manufacturing a liquid crystal display apparatus having, on one of a pair of substrates disposed so as to be opposed with a liquid crystal layer therebetween, a reflecting film for reflecting incident light from the other substrate, comprising:

applying a photosensitive resin on said one of the substrates;

in order to form asperities in a first region of the applied photosensitive resin film which do not extend all the way through the photosensitive resin and to form a contact hole in a second region of the applied photosensitive resin film, exposing at least part of the first region with various integrals of exposure amounts using a first photomask so that the photosensitive resin in the first region is left in respective different film thicknesses, and exposing at least part of the second region with an integral of exposure amount different from those for the first region using a second photomask, wherein each of said first and second photomasks comprise both light transmitting portions for transmitting illuminance and light intercepting portions for blocking illuminance so that the asperities and contact hole are formed based upon arrangement of the light transmitting portions and light intercepting portions in the photomasks;

developing the exposed photosensitive resin;

heat-treating the developed photosensitive resin; and

forming a reflecting film on the heat-treated photosensitive resin so that the reflecting film is in electrical communication with a switching element through said contact hole.

Please add the following new claims:

22. (New) A method of making a reflective liquid crystal display, the method comprising:

applying a photosensitive resin to a substrate;

forming asperities which do not extend all the way through the resin in a first region of the photosensitive resin by using a first photomask and exposing at least part of the first region using said first photomask;

forming contact holes in a second region of the photosensitive resin using a second photomask different than the first photomask, and exposing at least part of the second region using said second photomask;

developing the exposed photosensitive resin;

heat treating the developed photosensitive resin;

forming a reflective electrode on the heat treated photosensitive resin over asperities so that said reflective electrode is in communication with at least one switching element through at least one of the contact holes; and

wherein each of said first and second photomasks comprise both light transmitting portions for transmitting illuminance and light intercepting portions for blocking illuminance so that the asperities and contact hole are formed based upon arrangement of the light transmitting portions and light intercepting portions in the photomasks.

23. (New) The method of claim 22, wherein uniform and low-illuminance exposure is performed so as to expose the photosensitive resin using the first photomask, while uniformed and higher illuminance exposure is performed so as to expose the photosensitive resin using the second photomask.

24. (New) The method of claim 22, wherein the photosensitive resin comprises a positive photosensitive resin, and the method further comprises removing the photosensitive resin when it is left in the second region after the developing.

25. (New) The method of claim 22, wherein uniform and low-illuminance exposure is performed so as to expose the photosensitive resin using the second photomask, while uniform and higher illuminance exposure is performed so as to expose the photosensitive resin using the first photomask.